UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,111	11/16/2001	Arnab Das	15-19-15-2	3440

32498 7590 01/05/2007

CAPITOL PATENT & TRADEMARK LAW FIRM, PLLC
ATTN: JOHN CURTIN
P.O. BOX 1995
VIENNA, VA 22183

EXAMINER	
AGHDAM, FRESHTEH N	
ART UNIT	PAPER NUMBER
2611	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/991,111	DAS ET AL.	
	Examiner	Art Unit	
	Freshteh N. Aghdam	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 October 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 10/20/2006 have been fully considered but they are not persuasive.

Applicant's Arguments: Regarding claims 1, 3-10, and 13-14, page 5, applicant argues "encoded signaling information within existing shared control channels is not separately decoded such that a portion of the encoded information is decoded to derive transmission format information for a corresponding data transmission before a remainder of the encoded information is decoded. Said another way, none of the cited references, taken separately or in combination, discloses or suggests the use of a shared control channel as in claims 1, 3-10, 13, and 14."

Regarding claim 12, page 6, applicant argues "Lee does not suggest the claimed pucturing "tail symbols" that do not appear to be part of signaling information; rather, they are used for error checking."

Examiner's Response: Regarding claims 1, 3-10, and 13-14, Kim discloses separately decoding at least a portion of the encoded signaling information (Fig. 5-9; 1st and 2nd decoders); and deriving transmission format information (Col. 5, Lines 10-18 and 60-65; Col. 6, Lines 30-35) from the separately decoded portion of the encoded

signaling information for the corresponding data transmission before a remainder of the encoded signaling information is decoded (Fig. 5-9; CRC detectors).

Regarding claim 12, Kim discloses processing information in a wireless communication system via a dedicated control channel that includes encoded signaling information, wherein the encoded signaling information includes one or more portions of encoded information and decoding one or more portions of the encoded information to facilitate transmission in the wireless communication system (Fig. 5-9). Kim is not explicit about selectively puncturing bits from the encoded signaling information such that the number of bits punctured from certain of the one or more portions is less than the number of bits punctured from the other portions; and separately decoding the certain one or more portions of the encoded signaling information to facilitate transmission in the wireless communication system. The instant application's disclosed prior art discloses using a shared control channel for processing control information to increase bandwidth efficiency by utilizing a shared control channel instead of a dedicated control channel (Pg. 1, Lines 16-35). Lee discloses selectively puncturing of bits from one or more portions in a frame that is less than the puncturing of the bits from the remaining portions of the frame (Col. 6, Lines 7-43; Fig. 3-5) by puncturing the first portion of the frame and not puncturing the second portion of the frame that includes tail symbols. One of ordinary skill in the art would recognize that the same puncturing scheme could be applied to a signaling frame as well. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Lee with Kim and the instant application's disclosed prior art in order to increase the decoding capability of

the receiver, wherein one portion of the frame is punctured and the other portion of the frame is not punctured (Col. 6, Lines 32-37).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3-10, and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (US 6,438,119), and further in view of the instant application's disclosed prior art.

As to claims 1 and 14, Kim discloses separately decoding at least a portion of the encoded signaling information (Fig. 5-9; 1st and 2nd decoders); and deriving transmission format information (Col. 5, Lines 10-18 and 60-65; Col. 6, Lines 30-35) from the separately decoded portion of the encoded signaling information for the corresponding data transmission before a remainder of the encoded signaling information is decoded (Fig. 5-9; CRC detectors). Kim is not explicit about using a shared control channel for processing control information. The instant application's disclosed prior art discloses using a shared control channel for processing control information (Pg. 1, Lines 16-35). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of the instant application's disclosed

prior art with Kim in order to increase bandwidth efficiency by utilizing a shared control channel instead of a dedicated control channel.

As to claim 3, Kim teaches a dedicated control channel (Col. 1, Lines 47-52; Col. 5, Lines 9-18) used by a plurality of mobile stations for communicating with a base station (Col. 5, Lines 9-18). The control channel is used to send signaling information (Col. 1 Line 47; Col. 2, Line 24; Col. 13, Lines 51-64; Col.15, Line 67; Col. 16, Lines 1-28).

As to claim 4, Kim teaches a method for processing control information, wherein the control information, or signaling information, includes: transport format and resource-related information about the frame length of the data transmitted (Fig. 2C; Col. 2, Lines 14-25; Col. 7, Lines 21 -49); and cyclic redundancy check information (Col. 2, Lines 26-34; Col. 7, Lines 21-33).

As to claim 5, Kim teaches a method for processing control information, wherein the control information includes transport format and resource-related information, which includes transmission format information, Kim teaches the transmission format information in the form of frame length of the data transmitted (Col. 2, Lines 14-25., Col. 7, Lines 21-49); allocated rate of the data transmitted; allocated duration of the data transmitted; message identifier, direction, and type; and channel use starting time (Col. 9, Lines 33-68; Table 3).

As to claim 6, Kim teaches a method for processing control information, wherein the control information includes transmission format information, which includes: code and modulation information in the form of type of code used: Walsh code, quasi-

orthogonal code, Bi-phase Shift Keying, or Quadrature Phase Shift Keying (Col. 13, Lines 3-23); transport block set size information in the form of frame length of the data transmitted (Col. 2, Lines 14-25; Col. 7, Lines 21-49); and transport channel identification information in the form of pilot channel information for estimating the channel gain and phase and for performing acquisition and handoff (Col.5, Lines 49-64); and channel identifier and a channel parameter (Col. 7, Lines 1-10); and channel use starting time (Col. 9, Lines 33-68; Table 3).

As to claim 7, Kim teaches separately decoding a portion of the encoded signaling information is performed prior to the start of a transmission time interval corresponding to the data transmission (Fig. 5-9; Col. 5, Lines 10-18 and 60-65; Col. 6, Lines 30-35).

As to claim 8, Kim teaches convolutionally coding signaling information, and adding tail bits to the encoded signaling information (Col. 12, Lines 13-37).

As to claim 9, Kim teaches convolutionally coding signaling information, and selectively adding tail bits to the encoded signaling information (Col. 12; Lines 13-37).

As to claim 10, Kim teaches convolutionally coding signaling information and puncturing selected bits from the encoded signaling information (Col. 12, Line 65- Col. 13, Line 19).

As to claim 13, Kim discloses encoding the signal information such that portions (i.e. all the portions) of signaling information are encoded and one or more of the portions include transmission format information for the corresponding data

transmission (Fig. 2 and 5, means 550; Col. 5, Lines 10-18 and 60-65; Col. 6, Lines 30-35); and transmitting the encoded signaling information via a dedicated control channel such that the transmission format information can be derived from the one or more portions of the encoded signaling information (Fig. 5 and 7).

Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim and the instant application's disclosed prior art, further in view of Lee et al (US 6,621,873).

As to claims 11-12, Kim discloses processing information in a wireless communication system via a dedicated control channel that includes encoded signaling information, wherein the encoded signaling information includes one or more portions of encoded information and decoding one or more portions of the encoded information to facilitate transmission in the wireless communication system (Fig. 5-9). Kim is not explicit about selectively puncturing bits from the encoded signaling information such that the number of bits punctured from certain of the one or more portions is less than the number of bits punctured from the other portions; and separately decoding the certain one or more portions of the encoded signaling information to facilitate transmission in the wireless communication system. The instant application's disclosed prior art discloses using a shared control channel for processing control information to increase bandwidth efficiency by utilizing a shared control channel instead of a dedicated control channel (Pg. 1, Lines 16-35). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of the instant application's

disclosed prior art with Kim for the reason stated above. Lee discloses selectively puncturing of bits from one or more portions in a frame that is less than the puncturing of the bits from the remaining portions of the frame (Col. 6, Lines 7-43; Fig. 3-5) by puncturing the first portion of the frame and not puncturing the second portion of the frame that includes tail symbols. One of ordinary skill in the art would recognize that the same puncturing scheme could be applied to a signaling frame as well. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teaching of Lee with Kim and the instant application's disclosed prior art in order to increase the decoding capability of the receiver, wherein one portion of the frame is punctured and the other portion of the frame is not punctured (Col. 6, Lines 32-37).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

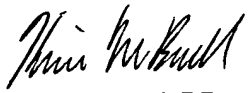
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Freshteh N. Aghdam whose telephone number is (571) 272-6037. The examiner can normally be reached on Monday through Friday 9:00-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Freshteh Aghdam
December 29, 2006



KEVIN BURD
PRIMARY EXAMINER